Striped Cucumber Beetle in Protected Settings

Judson Reid, Cornell Cooperative Extension, Cornell Vegetable Program

The Striped Cucumber Beetle is among the most odious of vegetable pests. They emerge early in the growing season, last until fall, spread diseases, and damage both foliage and fruit with their feeding. For organic growers, we have very limited spray options. There are conventional materials that knock back beetle populations, but they often rebound and require multiple applications. Growing cucumbers in protected settings such as greenhouses and high tunnels is an excellent marketing opportunity, but these crops are even more susceptible to Striped Cucumber Beetle, as early in the season there aren’t many cucurbits outside for them to feed on, leading to higher numbers per plant inside. What can we do to keep the indoor crop healthy?

Variety Selection
First, choose varieties that are less attractive to Striped Cucumber Beetle. Work by Guan, Ingwell and Egel (2018) in Purdue University high tunnels demonstrated that Corinto, Jawell, Kalunga, Katrina, Lisboa, Manny and Picolino had significantly lower beetle presence over time than other popular varieties. Further work at Purdue suggests that insect netting along tunnel sidewalls can exclude beetles while maintaining adequate ventilation. Research has shown that a mesh pore size of approximately 0.8 x 1.0 mm is effective.

When there aren’t many cucumbers outside, there are lots of Striped Cucumber Beetles inside. Photo by Judson Reid, CCE Cornell Vegetable Program

continued on page 3
About VegEdge

VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 14 counties.

The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

We’re interested in your comments. Contact us at: CCE Cornell Vegetable Program 480 North Main Street, Canandaigua, NY 14224 Email: cce-cvp@cornell.edu Web address: cvp.cce.cornell.edu

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VegEdge is published 25 times per year, parallel to the production schedule of Western New York growers. Enrollees in the Cornell Vegetable Program receive a complimentary electronic subscription to the newsletter. Print copies are available for an additional fee. You must be enrolled in the Cornell Vegetable Program to subscribe to the newsletter. For information about enrolling in our program, visit cvp.cce.cornell.edu. Cornell Cooperative Extension staff, Cornell faculty, and other states’ Extension personnel may request to receive a complimentary electronic subscription to VegEdge by emailing Angela Ochterski at aep63@cornell.edu. Total readership varies but averages 700 readers.

Information provided is general and educational in nature. Employees and staff of the Cornell Vegetable Program, Cornell Cooperative Extension, and Cornell University do not endorse or recommend any specific product or service.

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are possible. Some materials may no longer be available and some uses may no longer be legal. All pesticides distributed, sold or applied in NYS must be registered with the NYS Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status of Environmental Conservation (DEC). Questions concerning the legality and/or registration status of pesticides used in NYS should be directed to the appropriate Cornell Cooperative Extension (CCE) specialist or your regional DEC office.

CCE and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products or companies is made or implied. READ THE LABEL BEFORE APPLYING ANY PESTICIDE.

Help us serve you better by telling us what you think. Email us at cce-cvp@cornell.edu or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.

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The next issue of VegEdge newsletter will be produced on June 15, 2022.

Accumulated Growing Degree Days, 6/6/22

Emma van der Heide, CCE Cornell Vegetable Program

Accumulated Growing Degree Days (AGDD)
Base 50°F: April 1 - June 6, 2022

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* Airport stations
** For other locations: [http://newa.cornell.edu](http://newa.cornell.edu)
Sprays
Sprays are an option, although limited. For organic production consider azadirachtin products. Additionally, there are a number of biological sprays (based on fungi or bacteria) that can infect beetle pests. Growers report these in combination with azadirachtin, such as Aza-Direct, improves control. There are commercially available beneficial nematodes, such as Steinernema riobravi, that show promise for controlling the larval stage of Striped Cucumber Beetle in the soil. These are of limited use for protected settings, as the beetles are emerging from soil outside the greenhouse.

Conventional sprays that can be used in high tunnels and greenhouses include Admire (imidacloprid, class 4A). For soil grown greenhouse crops of tomato and cucumber this product has a specified rate of 0.6 oz/1000 plants applied via irrigation systems with a minimum of 21 gallons of water. Apply only to fruiting crops in soil-based media. Immature plantings are susceptible to phytotoxicity. Admire is limited to one application per crop cycle in protected settings and has a 0-day pre-harvest interval at the above rate. Note the product Assail, also in the 4A class of insecticide, is prohibited in greenhouse settings. There are effective pyrethroids (class 3A) for greenhouse use, but we don’t recommend these on greenhouse cucumber crops as they may contribute to higher aphid populations.

Manual Removal of Beetles
Finally, we’ll mention that smaller high tunnel plantings may benefit from removal of beetles with a handheld vacuum or other manual device. This needs to happen early in the day, when lower temperatures have the beetles moving at a slower pace. If this technique isn’t combined with exclusion netting, it may approximate an effort at the beach to lower ocean levels with a teacup.

Proposed Changes to the FSMA Agricultural Water Regulations
Robert Hadad, Cornell Cooperative Extension, Cornell Vegetable Program
Under the original set of regulations, water testing for determining bacterial load and creating a baseline to compare water test results over time were cornerstones. Under the new proposed rewrite of the regulations, testing is not required but farmers will have to make their own assessments of their water quality throughout the growing season.

Agricultural water assessments mean you must really study the source of your irrigation water (production water) for field production. It also means for washing produce and cleaning and sanitizing wash/pack facilities, the water must meet drinking water standards – no detectable bacteria in water samples.

The new proposed regulations require an annual pre-harvest assessment of their ag water to see what might contaminate their crops during irrigation. The production water source used for irrigation needs to be monitored for risks of contamination from several sources such as livestock, wildlife, manure, runoff, adjacent land use, chemical, what’s going on upstream, or flooding. The assessment isn’t a “one and done deal”. This will involve understanding the yearly factors that might affect water quality, how to prevent issues, and how to mediate problems.

Water testing is still a good idea! Creating a baseline with water test results from each water source used on a farm can help determine water quality. Do the bacterial counts stay fairly constant over the season, or does it fluctuate? Are the fluctuations random or is there a pattern? What might be the cause of the fluctuations?

The final regulations are due out later this year. If you would like assistance in figuring out your ag water assessments before you are forced to do it, the CVP team is here to help. Contact Robert Hadad for assistance at rgh26@cornell.edu or 585-739-4065.

Cornell Vegetable Program Welcomes New Field Technicians
Cornell Cooperative Extension, Cornell Vegetable Program
Nina Gropp
"Hello! My name is Nina Gropp. I moved from Grand Rapids, Michigan to join the Cornell Vegetable Program team. I earned my BS in Biology with a focus in Ecology and Evolutionary Biology from Grand Valley State University. I grew up in southwest Michigan and my summers were spent in my grandpa’s garden. My time at GVSU sparked my interest in pursuing sustainable agriculture in my career. I have worked on a small non-profit urban farm and a family-owned organic farm. I am excited to meet you all, see your farms, and learn more about agriculture in New York State!"

Anthony Rampulla Jr
"I am from Palmyra NY and was born in Rochester. I graduated from Finger Lakes Community College with a degree in Horticulture and a learning track in Cannabis Cultivation and Biology in May of 2022. During school, I worked on a CBD hemp farm called Black Bird Apothecary Farms, managing pests, feeding schedules, and day to day operations. This opportunity showed me that I enjoyed working with plants! I am enthusiastic to get started as a technician for Cornell Cooperative Extension’s Vegetable Program team. I want to be able to assist WNY farmers and be able to further educate the area on proper IPM and increasing overall yields for farmers."
GENERAL

Cutworm Alert: Black cutworm larvae have been very active feeding on field crops and vegetables across our region this week. Personally, I've seen them in sweet corn and table beets. Feeding will continue for the next several weeks based on the recorded flights of the moths having arrived in our area during late April and into May. Larvae feed on newly emerged crops and often clip young plants at or below the soil line each night. Many vegetable crops are susceptible. See the general article on page 5 of the May 25th VegEdge. – JK

ASPARAGUS

Asparagus beetle larvae have hatched and are actively feeding on the ferns. The larvae are gray with darker heads, relatively large (1/4” – ½”) and messy. They can do quite a bit of defoliation, stripping the ferns of their leaflets. Radiant, or Entrust for organic production, is a good remedy with a favorable environmental profile and does not require a spray license. – EB

BEETS

Keep scouting for black cutworms feeding in beets. See last week's VegEdge for control measures (in Crop Insights/Beets, page 6). Weed control is also important at this time. – JK

COLE CROPS

Seeing cabbage maggot damage out in the field. Not seeing swede midge damage yet but they should have begun emerging. Check transplants moving forward to avoid setting infested seedlings out into the field.

CUCUMBERS

What's yellow and black and striped all over? Cuke beetles! Imidacloprid (Admire & generics) and other neonics applied to seed or used around planting offers several weeks of protection and reduces risks to pollinators compared to later applications. If you like the long-lasting, systemic control of this control option, you’ll need a spray license to continue using the material next year – all neonic class insecticides are becoming restricted use as of January 1, 2023.

Other soft options include row cover to exclude beetles or kaolin clay (Surround) to deter their presence. Steinernema riobravis are beneficial nematodes that feed on cuke beetle larvae while they are damaging the cucurbit roots in the soil. Nematodes can help reduce pressure for the second generation – they are not going to treat a population of adults.

For information on striped cucumber beetle management in tunnels and greenhouses, see the cover article.

GARLIC

Be on the lookout for allium leaf miners. For complete details, check out https://nysipm.cornell.edu/agriculture/vegetables/pest-alerts-vegetables/allium-leaf-miner/

LETTUCE AND GREENS

Tarnished plant bugs have returned. They like large, pale midribs. Light veined romaine and white chard are most favored, red lettuces tend to have less damage than green ones. Tarnished plant bugs fly well and often flee when disturbed. They have a distinctive yellow triangle just behind their head. Damage is sunken brown lesions. Secondary infections are not uncommon, especially in chard. Pyrethroids are control materials in lettuces. Check the labels carefully since some only have head lettuce registrations and the preharvest interval (PHI) ranges widely from chemistry to chemistry within the pyrethroid class.

Also seeing some white mold taking down heads of lettuce.
ONIONS
Check your upland plantings for thrips. Pressure tends to be higher along field edges. Thrips will hide way down in the new-
est growth.

Many direct seeded fields are 2-3 leaf stage with earliest plantings at 3-4 leaf stage. Earliest transplanted fields are at 7-9
leaf stage with early-maturing varieties just starting to bulb. Transplanting is complete and barley nurse crops are pretty
much dead. This week growers are applying post-emergent herbicides to clean up weed escapes. Botrytis leaf blight has
shown up and onion thrips are progressing slowly. Please RSVP for dinner at the Muck Onion Twilight Meeting in Wolcott
by June 13th – looking forward to seeing you for this meeting on Thursday, June 16th! – CH

Post-emergent herbicides. The 2-3 leaf stage is the youngest safest stage to apply high rates of post-emergent herbicides,
such as Buctril 2E 8 fl oz/A + Goal 2XL 4 fl oz/A. The 5-leaf stage is the largest stage for which it is safe to apply Buctril and
the 6-leaf stage is the last safe stage to apply Chateau, after which stage, severe injury may occur. It is hard to kill weed
escapes that are larger than 3 inches tall in a single application, but it is often possible to kill 4-6” weeds in two applications.

Botrytis leaf blight (BLB). Over an inch of rain fell in Oswego and Wayne Counties, while Elba only got 0.25” last week. All
regions got about 0.5” rainfall yesterday. Cool rainy days make for favorable conditions for BLB, which we found at 1.0 BLB
halos per leaf in 3-4 leaf onions in Wayne (and likely Oswego), which got a lot of rain last week and in transplants in Elba and
Wayne. With more rain in the forecast, it is expected that BLB will continue to progress. Mancozeb 1 lb/A can be effective
when it is initiated at first detection of BLB halos. Mancozeb 2-3 lb/A is more effective once BLB halos exceed 1.0 per leaf,
especially when onions are larger. Mancozeb 3 lb and Bravo 3 pt have similar activity on BLB when pressure is 2-5 BLB halos/
leaf, but Bravo will out-perform mancozeb at higher levels of BLB halos. Given recent favorable conditions for BLB, you may
want to treat all onions 3-4 leaf or larger with mancozeb 1 lb this week, as this is a relatively economical fungicide strate-
gy for BLB. – CH

Onion thrips (OT). We did not see any movement in onion thrips pressure from last week, which was 0.0 to 0.1 thrips per
leaf. The Cornell recommendation is to apply Movento 5 fl oz/A/Senstar 10 fl oz/A when thrips reach 0.6 to 1.0 thrips per
leaf (adults + larvae), or at early-bulb swell, whichever comes first. So, you may have some early-maturing, early-planted
transplants that are at early bulb swell this week that should get their first application of Movento. Senstar is another insec-
ticide that is a premix with the same amount of active ingredient in Movento (spirotetramat) and pyriproxyfen, the latter of
which has no activity on onion thrips. The Senstar label requires that consecutive applications be 14 days apart. We recom-
mend consecutive applications of Movento be applied 7-10 days apart. Thus, two applications of Senstar is not advised.
Rather, if you intend to use Senstar, use it either as your first or second spray and use Movento for the other application.

POTATOES
Colorado potato beetle (CPB) adults are out and will be finding their way to emerged plants. Seed treated with products
such as Admire Pro, Cruiser or CruiserMaxx, or Platinum at planting should show control of early populations. Continuous
use of neonicotinoid products (IRAC Group 4) for CPB control can lead to resistance, so farms who rely on neonicotinoids or
are seeing less control from these products as in previous years should consider moving to other classes of insecticides and
adopting an insecticide rotation program. For more information on insecticide rotations for CPB control, see the article titled
“Potato Seed Treatments and In-Furrow Insecticide Applications for Colorado Potato Beetle Resistance Management” in
VegEdge Vol. 18 Issue 3 (March 1, 2022). – ML
New York State Online Farm Directory Launching in June '22

Cornell Cooperative Extension, 6/1/2022

As part of Cornell Cooperative Extension’s role in strengthening New York State agriculture, we are helping to spread word of the New York State Department of Agriculture and Markets’ plans to launch a statewide online Farm Directory. The Farm Directory, which launches in mid-June, will connect consumers to producers of farm products and promote New York farms.

The Farm Directory will appear on the New York State Department of Agriculture and Markets' website at agriculture.ny.gov/farming/farm-directory. It will show information for each listed farm, which can include the farm name, farm type, point of contact, addresses, telephone number, email address, website, social media, and a listing of all available products produced by the farm. Other categories of interest to the public, like the farm’s inclusion in the New York State Grown & Certified Program and designations of organic, halal or kosher certified may also be noted. Website visitors will be able to sort or search the directory by any field.

Since not every farm offers products to the public at the farm site, each farm can indicate whether it is open to the public, or if there is another means that their farm product can be accessed. This might include listing a distributor, a brand name that your product is eventually marketed under, or a specific consumer-facing website where the public can determine where to purchase your product in a retail location. The information available on the directory for each farm can be tailored to meet the individual needs of each business and farmers will be able to update their information as desired.

The creation of the Farm Directory derives from Section 16(52) of the New York State Agriculture and Markets Law, requiring the Department to create a directory of every farm in New York State. Farms will be receiving a package in the mail shortly outlining the Farm Directory purpose, a survey to collect information on the farm to be included in the Directory, and a return envelope.

If you choose not to have your farm participate in the Directory, you are required by law to notify the New York State Department of Agriculture and Markets of this decision by opting out. Farms may opt out by returning the provided survey or indicating it through the online survey linked at the website above.

Farms that initially opt out can later contact the New York State Department of Agriculture and Markets if they wish to be included at any point. Also, farms can also contact the New York State Department of Agriculture and Markets if they wish to opt out after initially choosing to participate in the Directory.

For questions or additional information on the Farm Directory, please contact the New York State Department of Agriculture and Markets at (518) 485-1050 or FarmDirectory@agriculture.ny.gov.

Upcoming Events

2022 Muck Onion Grower Twilight Meeting in Wolcott
June 16, 2022 (Thursday) | 4:00 pm - 7:00 pm with dinner to follow
Williams Cattle Farms, 5830 Muckland Ave, Butler, NY 14590

A collaborative effort between the Oswego County Vegetable Growers and Improvement Association and CCE Cornell Vegetable Program, this event will feature herbicide trial demonstrations. See the full meeting agenda on our website at https://cvp.cce.cornell.edu/. 2.25 DEC recertification credits will be available (categories 1A, 10 and 23). CCA credits will also be available.

Dinner follows the educational event and is FREE thanks to the generous support of our sponsors! You must RSVP for dinner by emailing Sam Allen by Monday, June 13 at samanthallen91@gmail.com

Erie Regional Produce Meetings
July 7, 2022 (Thursday) | 6:00 pm - 8:00 pm
Curvin Martin Farm, 12829 Eagle Harbor, Knowlesville Rd, Albion NY 14411

July 12, 2022 (Tuesday) | 6:30 pm - 8:30 pm
Hidden Valley Produce, 324 Warren Rd, Frewsburg, NY 14738

July 13, 2022 (Wednesday) | evening event
Agle's Farm Market, 7952 Gowanda State Rd, Eden, NY 14057

More information will be available soon.
Statewide, fourteen sites reported this week. European corn borer (ECB) - E was caught at only two sites and ECB-Z was caught at three sites. The hybrid ECB was caught at three of the four sites currently trapping for it: Hurley (5), Seneca Castle (8) and Geneva (3). Corn earworm (CEW) are flying early this season, possibly from overwintering moths. Seven sites reported CEW catches this week. CEW usually lay on fresh silk and then enter the ear making scouting very difficult. For whorl stage corn, moths will lay eggs on the leaves and larvae will feed on the leaves. No other moths were caught this week. Degree day accumulation for ECB-E would put their development at first eggs with some sites pushing peak spring moth flight.

An interactive trapping map is located at the bottom of the Sweet Corn Pheromone Trap Network Report. You can select to view the map based on species, week, region, county or town.

European corn borer (bivoltine) development estimated using a modified base 50F degree day calculation

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WNY Pheromone Trap Catches: June 7, 2022

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<td>0</td>
<td>1</td>
<td>0</td>
<td>496</td>
</tr>
<tr>
<td>Portville (Cattaraugus)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>524</td>
</tr>
<tr>
<td>Ransomville (Niagara)</td>
<td>0</td>
<td>1</td>
<td>NA</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>519</td>
</tr>
<tr>
<td>Seneca Castle (Ontario)</td>
<td>4</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>451</td>
</tr>
<tr>
<td>Williamson (Wayne)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>531</td>
</tr>
</tbody>
</table>

ECB: European Corn Borer; CEW: Corn Earworm; FAW: Fall Armyworm; WBC: Western Bean Cutworm; DD: Degree Days; NA: not available

Average Corn Earworm Catch

<table>
<thead>
<tr>
<th>Per Day</th>
<th>Per Five Days</th>
<th>Per Week</th>
<th>Days Between Sprays</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.2</td>
<td>&lt;1.0</td>
<td>&lt;1.4</td>
<td>No spray (for CEW)</td>
</tr>
<tr>
<td>0.2-0.5</td>
<td>1.0-2.5</td>
<td>1.4-3.5</td>
<td>6 days</td>
</tr>
<tr>
<td>0.5-1.0</td>
<td>2.5-5.0</td>
<td>3.5-7.0</td>
<td>5 days</td>
</tr>
<tr>
<td>1-13</td>
<td>5-65</td>
<td>7-91</td>
<td>4 days</td>
</tr>
<tr>
<td>13+</td>
<td>65+</td>
<td>91+</td>
<td>3 days</td>
</tr>
</tbody>
</table>

Add one day to the recommended spray interval if daily maximum temperatures are less than 80°F for the previous 2-3 days.
Contact Us

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Margie Lund  |  607-377-9109 cell  |  mel296@cornell.edu
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